

PATENT

Attorney Docket No. A-69466-3/RBC/VEJ
Application No. 10/672,766**REMARKS**

Reconsideration of this Application is respectfully requested. Applicants thank the Examiner for the courtesy extended during the personal interview on June 2, 2005. The Examiner's Interview Summary accurately describes the substance of the interview.

Upon entry of the foregoing amendments, claims 121-161 are pending in the application, with claims 121, 126, 134, 138, 153 and 169 being the independent claims. Support for the subject matter of the amended claims is contained in the application as originally filed. Because the foregoing changes introduce no new matter, their entry is respectfully requested.

Based on the above Amendment and the following Remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 126-129, 138-142 and 153 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants respectfully submit that claim 126 has been rewritten in independent form and is now allowable, as are claims 127-129 which depend therefrom.

Applicants respectfully submit that claim 138 has been rewritten in independent form and is now allowable, as are claims 139-142 which depend therefrom.

Applicants respectfully submit that claim 153 has been rewritten in independent form and is now allowable.

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Application No. 10/672,766***Rejections under 35 U.S.C. § 102 and 103******Claims 121-125 and 130-132***

The Examiner has rejected claims 121-125 and 130-132 under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,640,605 to Gitlin et al. ("the Gitlin patent"). The Gitlin patent fails to teach or suggest the method of the present invention including a central longitudinal strap axis that extends obliquely across a bend line. In particular, amended independent claim 121 calls for:

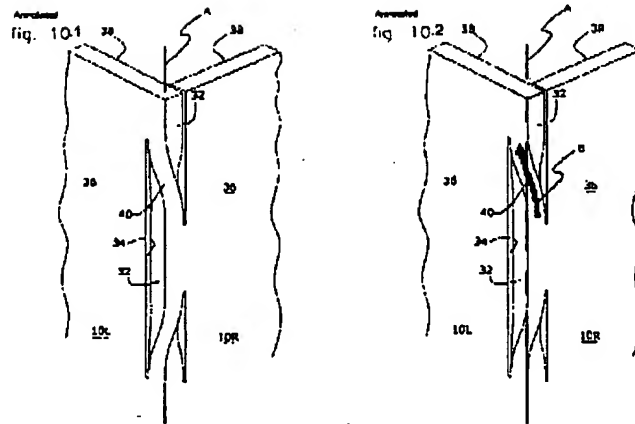
forming a plurality of bending strap-defining structures in the sheet of material which are positioned relative to the bend line to define at least one bending strap in the sheet of material having a *central longitudinal strap axis oriented to obliquely extend across the bend line*, the strap-defining structures being configured and positioned with edge-to-face engagement of the material to produce bending of the sheet of material along the bend line.

The Gitlin patent does not disclose such a feature. Instead, the Gitlin patent discloses straps which have a central longitudinal axis¹ that extends parallel to the bend line.

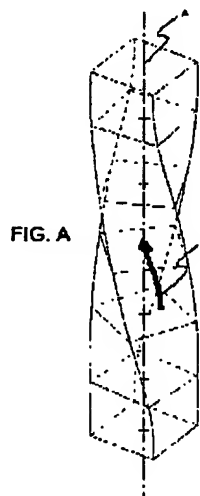
In particular, thinned regions 14 extend parallel to, and equidistant from, bending line A. See FIG. 8. This is the case whether the bending line is straight, as shown in FIG. 8, or curved, as shown in FIG. 10a. As the thinned regions overlap with one another, thinned regions 14 form straps which extend parallel to bending line A. See FIG. 8. In fact, the straps appear to be coincident with bending line A. See FIG. 8. When metal sheet 10 is bent into a right angle, the straps twist about their central longitudinal axis to form twisted regions 40. See FIG. 10. As can be seen in Annotated FIGS. 10.1 and 10.2 below, the twisted regions 40 twist about their central longitudinal axis, which axes are *parallel to* and substantially *coincident with* bending line A.

¹ Axis: 1 a : a straight line about which a body or a geometric figure rotates or may be supposed to rotate b : a straight line with respect to which a body or figure is symmetrical -- called also *axis of symmetry* c : a straight line that bisects at right angles a system of parallel chords of a curve and divides the curve into two symmetrical parts d : one of the reference lines of a coordinate system. See MERRIAM-WEBSTER ONLINE (www.Merriam-Webster.com) copyright 2005 by Merriam-Webster.

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Admittedly, each twisted region 40 includes material which "twists" about bending line A. For example, the surface of upper twisted region 40 twists about bending line A, as represented by arrow S in Annotated FIG. 10.2. However, the central longitudinal axis of the upper twisted region does not. See FIG. A below. Instead, the central longitudinal axis of upper twisted region 40 remains substantially coincident with, and thus parallel to bending line A. See FIG. A below.



In contrast, the method of the present invention is directed to forming strap-defining structures (e.g., slits 542) which form bending straps (e.g., 544) having central longitudinal axes

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(e.g., axis 553) which extend *obliquely* across the bend line. See e.g., FIGS. 6 and 11. As is discussed on page 34 of the present application, the longitudinal central axis of the strap *crosses the desired bend line at an angle other than 90°*. See page 34, lines 17 *et seq.* This is the case before the sheet of material is bent as shown FIGS. 6 and 11. This is also the case after the sheet of material is bent, as shown in FIG. B below.

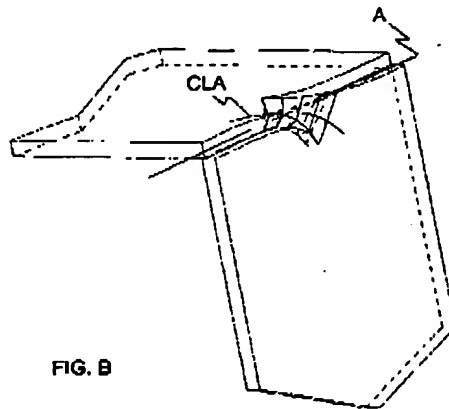


FIG. B

In any event, central longitudinal axis CLA of the present invention crosses bend line A, and it does so at an oblique angle. Such configuration allows reduces the amount of deformation due to torsion because it allows some deformation due to bending. For example, increasing the angle of the strap axes CLA increases the amount of bending about bend line A and lowers the amount of torsion about axis CLA. See, e.g., page 42, lines 4-6.

On the other hand, the central axis of Gitlin's straps are coincident with bending line A. As such, Gitlin's straps are likely subjected to all torsion or twist, and subjected to very little bending, if any. This is evidenced by FIG. 10 of the Gitlin patent which illustrates twisted regions 40 as extending along bending line A. As shown in Annotated FIGS. 10.1 and 10.2 above, twisted regions 40 appear to merely deform about bending line A, which further evidences that the central longitudinal axis of Gitlin's straps are coincident with bending line A.

For at least these reasons, Applicants respectfully submit that the Gitlin patent does not anticipate nor render obvious independent claim 121. Applicant submits that claims 122-125 and

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130-133, which depend from claim 121, are allowable over the cited art for at least the same reasons noted above.

Claims 134-137, 143-152, and 154-161

The Examiner has rejected claims 134-137, 143-152, and 154-161 under 35 U.S.C. §§ 102 and 103 as being anticipated by or unpatentable over the Gitlin patent. As discussed during the personal interview with the Examiner, the Gitlin patent fails to teach or suggest the method of the present invention in which adjacent pairs of arcuate slits define bending straps extending obliquely across the bend line with increasing strap width dimensions, and with a minimum width dimension also extending obliquely across the bend line. In particular, independent claim 134 calls for the steps:

selecting a solid sheet of material for slitting; and
forming a plurality of slits along a desired bend line with alternate slits along the bend line being positioned on alternating sides of the bend line and during the forming step, forming each slit with a central portion substantially parallel to and offset laterally from the bend line and with arcuate slit end portions on each end of the slit curving away from the bend line so that adjacent pairs of arcuate slits define bending straps extending obliquely across the bend line *with increasing strap width dimensions on both sides of a minimum width dimension, said minimum width extending obliquely across the bend line.*

The Gitlin patent fails to disclose or suggest such a feature. Instead, the Gitlin patent discloses twisted regions 40 which are uniform in width. *See, e.g., FIGS. 9-10.* Even when Gitlin utilizes a curved bending line A, the widths of the twisted regions remains constant. *See, e.g., FIGS. 10a and 10b.* Furthermore, the width dimension does not extend obliquely across the bend line but instead extends perpendicularly across the bending line A. *See id.*

For at least these reasons, Applicants respectfully submit that the Gitlin patent does not anticipate nor render obvious independent claim 134. Applicant submits that claims 133-137, 143-152 and 154-161, which depend from claim 134, are allowable over the cited art for at least the same reasons noted above.

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Attorney Docket No. A-69466-3/RBC/VEJ
Application No. 10/672,766***Claims 169-171***

The Examiner has rejected claims 169-171 under 35 U.S.C. § 102 and 103 as being anticipated by the Gitlin patent. As discussed during the personal interview with the Examiner, the Gitlin patent fails to teach or suggest the method of the present invention in which a plurality of arcs are formed that diverge away from the bend line. As presently amended, independent claim 169 calls for the steps:

forming a plurality of arcs on the sheet of material *diverging away from the fold line*, each of the arcs defining a plurality of connected zones between ends of the arcs, the arcs being symmetrically and longitudinally spaced on opposite sides of the fold line, the connected zones forming straps extending obliquely across the fold line; and
folding the sheet of material along the fold line.

The Gitlin patent also fails to teach or suggest arcs diverging away from the bend line. Instead, Gitlin's thinned regions 14 are either straight as shown in FIGS. 8-10, or curved as shown in FIG. 10a. In either case, thinned regions extend equidistant from bend line A and thus fail to *diverge away from the bend line*.

For at least these reasons, Applicants respectfully submit that the Gitlin patent does not anticipate nor render obvious independent claim 169. Applicant submits that claims 170 and 171, which depend from claim 169, are allowable over the cited art for at least the same reasons noted above.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided below.

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The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extension of time or additional claims, and/or credit any overpayment to Deposit Account No. 50-2319 (Order No. 470900-00021; Docket No. A-69466-3/RBC/VEJ).

Prompt and favorable consideration of this Amendment and Response is respectfully requested.

Respectfully submitted,

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